Indiana Tech Flash

Indiana's Most Comprehensive Electronic Resource For Engineering & Technology Education.

Special points of interest:

- **9 Pages of Resources!**
- **Upcoming Events & Workshops**

March 2010

ITEA Officially Becomes ITEEA

**NEWS RELEASE
For Immediate Release
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RESTON, Virginia, March 1, 2010 – The International Technology Education Association (ITEA) has officially become the International Technology and Engineering Educators Association (ITEEA) as a result of a February balloting of the association's voting membership. This was the association's second attempt to change the name. The first balloting resulted in a 65% favorable vote (66% was needed).

This close vote prompted the Board of Directors to request a second ballot, which resulted in over two-thirds of those who voted to approve the name change.

This change causes the association to immediately address curriculum and professional development that includes both technology and engineering education at the K-12 level.

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The term engineering is not new to the technology teaching profession; it has been used for over a century in various course titles, discussions, and curriculum efforts. The engineering community played a key role in the creation of this subject area as it has gone through various name changes as industry and technology have changed.

"The name change properly positions the association to deal with the 'T' & 'E' of a strong STEM education. The association has recently produced The Overlooked STEM Imperatives (ITEA, 2009) a publication that brings attention to technology and engineering as missing components of a solid STEM education. ITEEA's continuing initiatives with the Engineering byDesign™ curriculum work further adds to the promotion of technology and engineering at the K-12 school level.

Upcoming Dates & Events

Date	Event
February 12, 2010	Annual PLTW Engineering & Technology Education Student Conference - IUPUI
February 12, 2010	World of Wheels Student Career Day - Indianapolis
March 13, 2010	Warren VEX Robotics Clean Sweep Qualifier Tournament - Warren Central High School
March 18-20, 2010	ITEA Conference - Charlotte, NC
March 18-20, 2010	FIRST Boilermaker Robotics - Lafayette
March 30, 2010	Engineering Expo hosted by the Purdue Student Engineering Foundation - Purdue University
March 19, 2010	The FIRST Robotics Experience for STEM Education Workshop - Purdue NEW!
March 30, 2010	Engineering Expo hosted by the Purdue Student Engineering Foundation - Purdue University
April 13, 2010	The Indiana National Energy Education Development Project Workshop - Scottsburg NEW!
April 14, 2010	The Indiana National Energy Education Development Project Workshop - Rensselaer NEW!
April 15, 2010	The Indiana National Energy Education Development Project Workshop - Huntingburg NEW!
April 23, 2010	Inaugural Boiler Tech Challenge 2010: Aim for the Stars - Columbus NEW!
April 26, 2010	IMSTEA Super Mileage Challenge - O'Reilly Raceway Park More details here

The State of Indiana makes "surplus" computer hardware available to educational entities under IC 5-22-21-7.5. Questions about the program or about the status of pending orders may be directed to bflake@idoa.in.gov

http://www.doe.in.gov/ super/2010/01- January/013010/ documents/ surplus_computer_ request.pdf

Biodynamic Farming
A CIESE Collaborative Project

Biodynamic farming

Through this project, students will be introduced to the concepts of systems engineering. Systems engineering activities present an opportunity for students to do engineering the way engineers do it. Students can work together to identify problems or opportunities, explore alternatives, create models and test them. The Internet and computer-aided design software make it feasible for students in multiple locations to work together to develop solutions to complex engineering challenges.

http://www.ciese.org/ curriculum/aquaponics/ index.html

Core Concepts of Systems Engineering
A CIESE Collaborative Project

Introduction to the Core Concepts of Systems Engineering

This project is designed to provide students in grades 9-12 with an orientation to systems engineering concepts. Students will be provided with an overview of systems thinking including the systems model. Through guided activities students will reverse-engineer a common device that contains both electrical and mechanical components…

http://www.ciese.org/ curriculum/seproject/ index.html

Blender 3-D design and animation software

Blender is the free open source 3D content creation suite, available for all major operating systems

http:// www.blender.org/

Water Purification
A CIESE Collaborative Project

Water purification

This project integrates Science, Technology, Engineering and Math (STEM) using a systems engineering approach. Systems engineering activities present an opportunity for students to do engineering the way engineers do it. Students can work together to identify problems or opportunities, explore alternatives, create models and test them. The Internet and computer-aided design software make it feasible for students in multiple locations to work together to develop solutions to complex engineering challenges.

http://www.ciese.org/ curriculum/purification/ index.html

NATIONAL CENTER FOR TECHNOLOGICAL LITERACY LAUNCHES NEW WEBSITE

Museum of Science, Boston recently launched a new website making its National Center for Technological Literacy (NCTL) and its corresponding resources accessible nationwide

The new website offers educators information about NCTL curricula and professional development materials and provides individuals and organizations across the country with tools to advocate for technological literacy within their education systems.

The country's only science museum with a comprehensive strategy and infrastructure designed to foster technological literacy in both science

museums and schools nationwide, the Museum of Science now provides access on one easily navigable site to all NCTL activities and offerings.

They include low-cost K-12 engineering curricula and professional development opportunities, design challenges, contact information, and news updates with relevant data and research.

http://www.mos.org/nctl/

VU is committed to broadening the dual credit options available to Indiana students and providing them with opportunities to receive hands-on college experience in career and technical areas. With this in mind, we are pleased to announce that beginning in the Fall of 2009, *Project EXCEL will waive the tuition fee* for students enrolled in dual credit courses in select career and technical areas.

**http://
www.vinu.edu/cms/
opencms/
academic_resource
s/project_excel/**
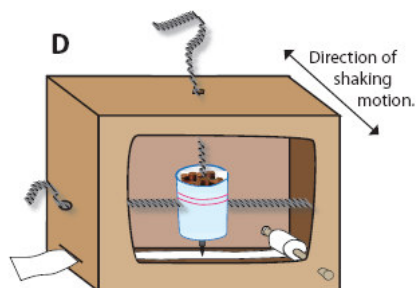

Build your own Seismograph

Students will gain a greater appreciation of

how a seismograph works, and a better understanding of recordings of ground motion that they see on seismograms. In small groups of 3-4 students, students are asked to design and construct a seismograph using common household and craft materials provided. Students will

demonstrate to the class how their seismographs record motion.

**http://www.iris.edu/hq/
files/programs/
education_and_
outreach/
aotm/8/1.SeismographM
odel-Lahr.pdf**
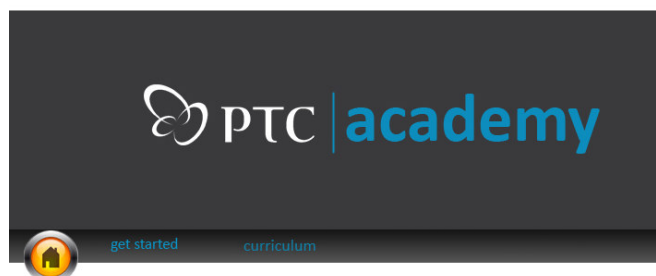
PTC Pro/Engineer Academy

Gain nearly 1 million worth of FREE CAD Software today!

Welcome to the PTC/Academy learning portal. Here you will find self directed and self paced tutorials to get you started using your FREE Pro/ENGINEER Wildfire!
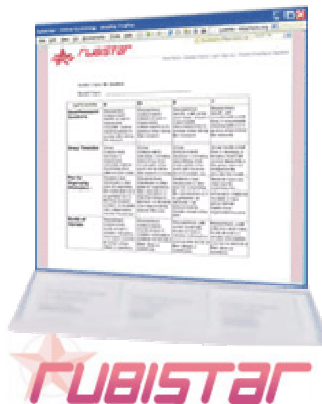
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www.ptcacademy.com/**
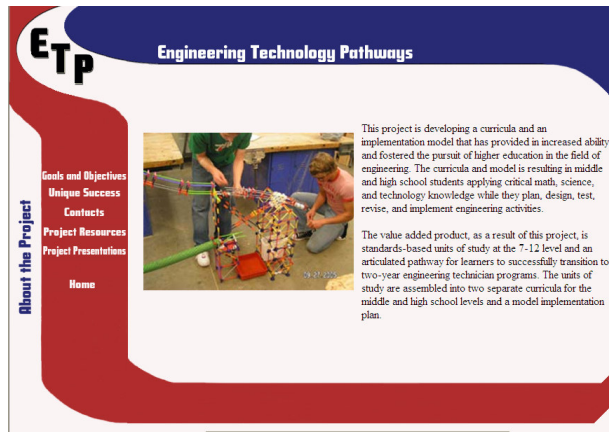
Elementary Design Briefs

LITE is a nonprofit Michigan corporation dedicated to assisting in the integration of Technology Education teaching and learning in schools around the state and Great Lakes region. We develop, manage, and provide resources and services for standards-based instruction.

http://litesource.org/ Aux_pages/ Elementary% 20Briefs.html

Engineering Technology Pathways Project

This project is developing a curricula and an implementation model that has provided in increased ability and fostered the pursuit of higher education in the field of engineering. The curricula and model is resulting in middle and high school students applying critical math, science, and technology knowledge while they plan, design, test, revise, and implement engineering activities.

http://www.ndetp.org/ about2.htm

Fuel Our Future

For high school students, the future is now. Students will use scientific data as well as engineering testing and design to learn about the factors that affect vehicle efficiency and safety.

They research real-world mass transit options, alternative fuels, and government tax incentives to provide alternatives to the gasoline-powered car. Students collect information about the types of vehicles and transportation habits used by teachers, friends, and neighbors. Finally, they use this information to create an action plan to reduce transportation-related energy use and greenhouse gas emissions.

http:// www.fuelourfuturenow. com/

RubiStar is a free tool to help teachers create quality rubrics.

http:// rubistar.4teachers.org/ index.php

Defined STEM

would like to share with you FREE access (for Indiana Teachers) to test drive Defined STEM.

You will need to use the promo code of: "INSTEM" This promo code will give you free access to the Defined STEM resources for 60 days after you login!

http://stem.defined learning.com

Technology and Children

How will we meet the needs of society in the future? Where will the technologists, engineers, and innovators of the next generation come from? How can we stop the erosion of interest in science, technology, engineering, and math?

The answers to these questions may lie within your own classrooms. Elementary education teachers who use lessons that introduce creativity and innovation can help

students with career exploration and development.

http:// www.iteaconnect.org/ Publications/TandC/ Sep09.pdf

Design Studio

On this Web site, you can design a house, walk through it in 3D, and then share it with the world. You can also learn more about architecture, past and present, and explore Frank Lloyd Wright's life and work.

http:// www.architectstudio3d.or g/AS3d/home.html

DonorsChoose.org

is a simple way to provide students in need with resources that our public schools often lack. At this not-for-profit web site,

teachers submit project proposals for materials or experiences their students need to learn. These ideas become classroom reality when concerned individuals,

whom we call Citizen Philanthropists, choose projects to fund.

http:// www.donorschoose.org

Everyday Design Briefs

The following design briefs have been posted as a courtesy to teachers in Chesterfield County, Virginia. Remember to check out the activities in the grades above and below the grade you are look for. Most activities can be adapted to an-other grade level with a minimum of work.

http:// www.childrensengineeri ng.com/ everydaywoolridge.htm

Schools Raise Achievement by Setting High Expectations for All Groups of Students

Schools are raising standards to improve academic and technical achievement and intellectual growth for all groups of students,

particularly at-risk students. This newsletter contains tools and strategies that school leaders and teachers are using successfully to help students meet higher expectations. It organizes the techniques into five categories: 1) meeting the specific needs of all

students; 2) building study skills; 3) creating intellectually demanding assignments; 4) improving reading skills; and 5) using differentiated instruction.

http:// publications.sreb.org

Combining Academic and Technical Studies to Prepare Students for College and Careers

Students preparing for college and careers need access to career-focused programs of study that combine challenging academic content and intellectually demanding career/technical (CT) studies. Schools wanting to raise student achievement can create career-focused programs of study that connect a solid academic core with a sequence of CT courses.

http://publications.sreb.org

TEACH GRANT PROGRAM

Through the College Cost Reduction and Access Act of 2007, Congress created the Teacher Education Assistance for College and Higher Education (TEACH) Grant Program that provides grants of up to $4,000 per year to students who intend to teach in a public or private elementary or secondary school that serves students from low-income families. If you are interested in learning more about the TEACH Grant Program, you should contact the financial aid office at the college where you will be enrolled to find out if they will participate in the TEACH Grant Program. For a listing of the TEACH Grant eligible institutions, click here.

http://studentaid.ed.gov/ PORTALSWebApp/ students/english/ TEACH.jsp

Public Service Loan Forgiveness Program

As a teacher in a public school or public service job you might be all eligible for the **Public Service Loan Forgiveness Program**.

Please be advised that your loans must be with The Federal Department of Education and they may also be able to help consolidate your loans for you.

A **Consolidation Loan** allows you to combine one or more of your federal education loans into a new loan that offers you several advantages such as one monthly payment, flexible repayment options, and reduced monthly payments. For more details contact the Public Service Forgiveness Program at: Contact 1-800-848-0979

http://www.finaid.org/ loans/ publicservice.phtml

Federal Perkins "Loan" Cancellations for Teaching in a Designated Subject Shortage Area

This cancellation is based on full-time teaching if there is a shortage of teachers in your subject area. Each year the state education agency determines any subject shortage areas in the elementary and secondary schools within the state.

Check with your local school system or state education agency to find out if your subject matter area has been so designated. If you teach full time in science, mathematics, foreign language, or bilingual education, you qualify for cancellation even if the state has not designated one of these subject areas as a shortage area. the "Teacher Shortage Areas" a nationwide listing by content area.

http://studentaid.ed.gov/ PORTALSWebApp/ students/english/ cancelperk.jsp

ITEEA

International Technology and Engineering Educators Association

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Suite 201
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Phone (703) 860-2100
Fax (703) 860-0353

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International Technology and Engineering Educators Association

1914 Association Drive
Suite 201
Reston, VA 20191-1539
Phone (703) 860-2100
Fax (703) 860-0353

ITEEA's publication titles and electronic communications have started the transition to new names and addresses to be in line with the association's new name. The association's new primary email address is iteea@iteea.org and new web address is www.iteea.org.

For further information, please contact ITEEA at iteea@iteea.org or 703-860-2100.

Indiana Department of Education
SUPPORTING STUDENT SUCCESS

LEARNING CONNECTION

Providing Data, Resources and Tools to Support Student Achievement

https://learningconnection.doe.in.gov

Engineering & Technology Education

Engineering & Technology Education

Tech Flash
Resources
Standards
Communication
Help Wanted
Good News

Curriculum Model
Click on the Dial to View Resources

Technology, Innovation, Design, & Engineering education
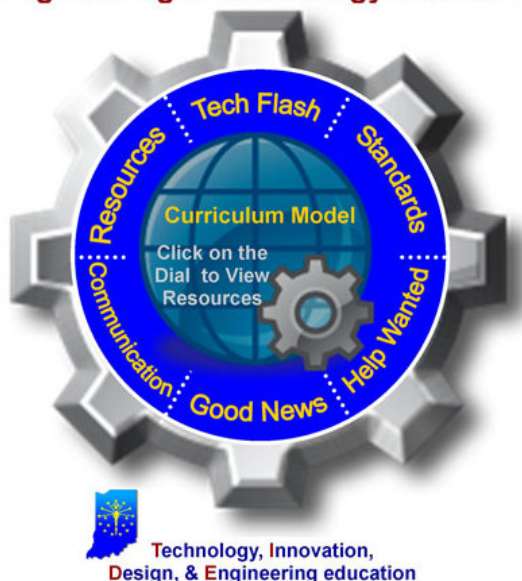
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http://www.doe.in.gov/octe/technologyed/welcome.html